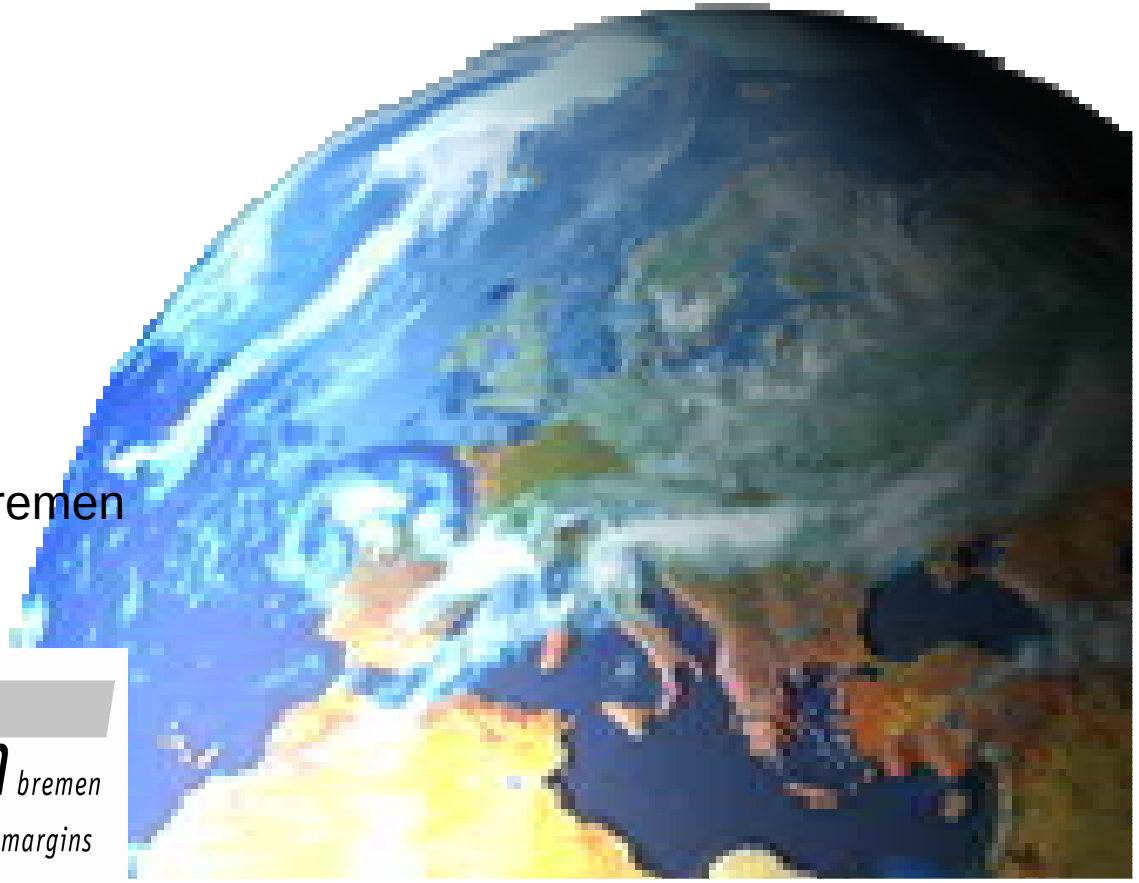
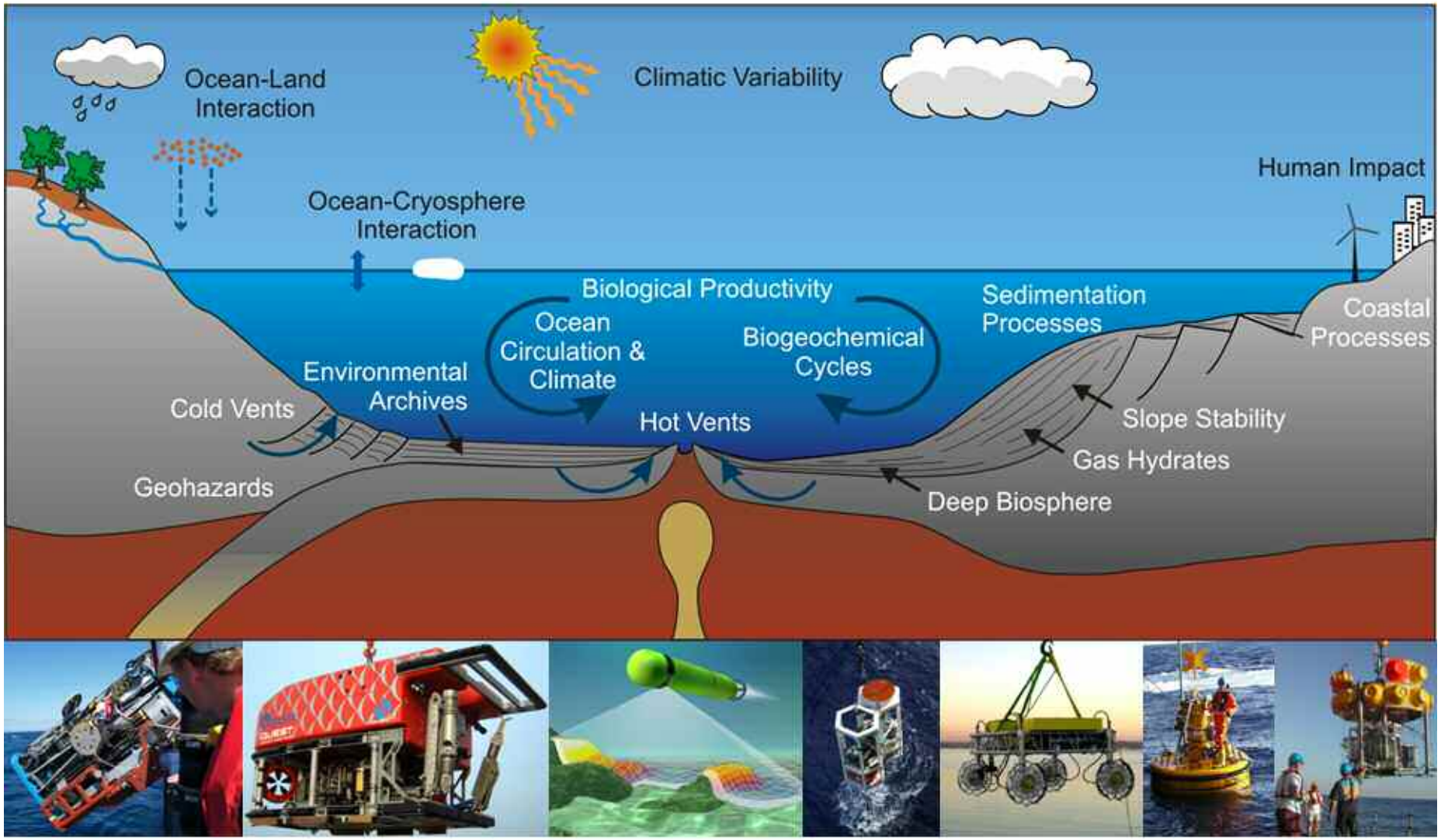
Making Data Accessible:
Suggestions from the Scientific Community

Gerold Wefer, Universität Bremen
21. September 2007



rcom bremen
research center ocean margins

The Ocean in the Earth System



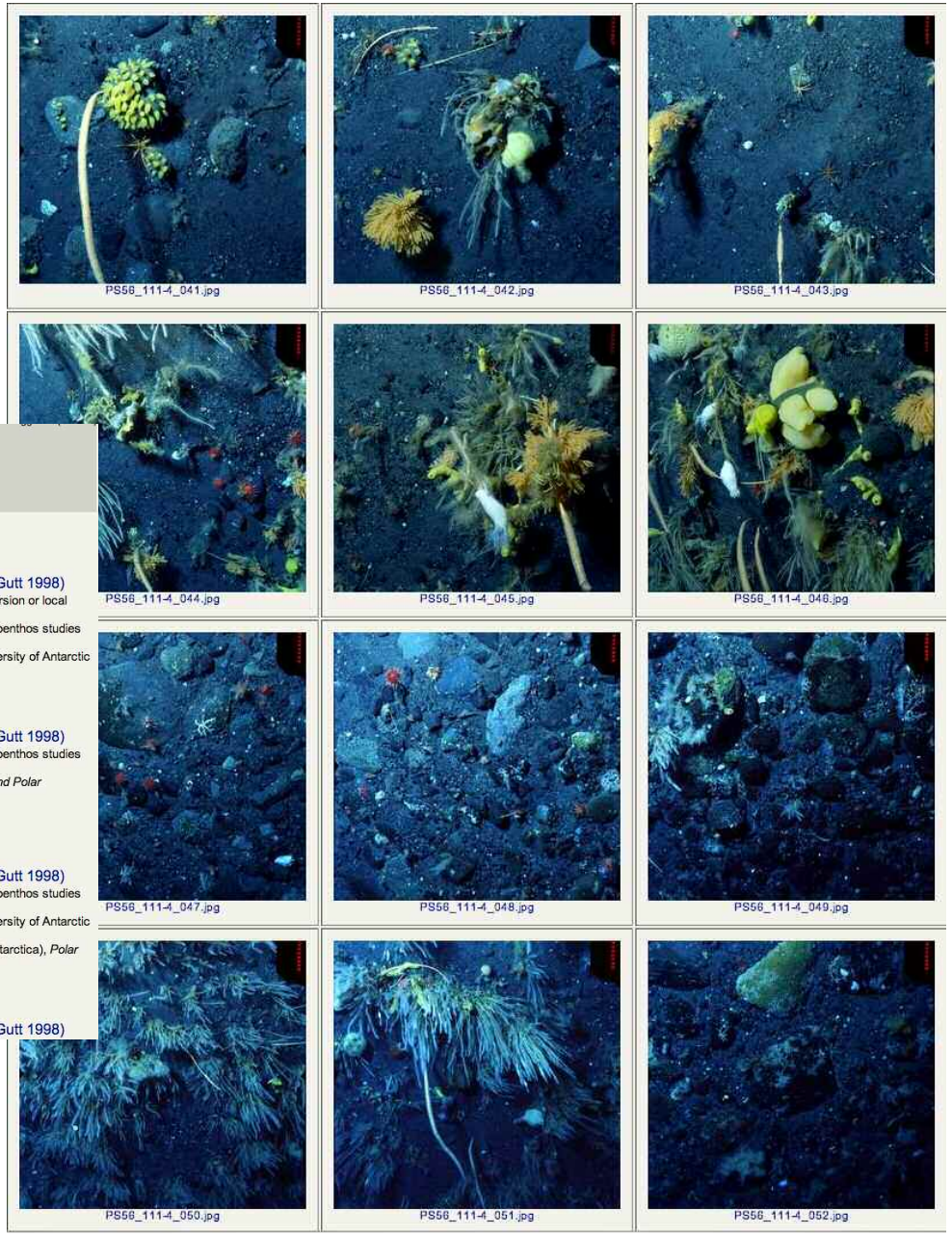
Sea-bed photos

Search for: sea-bed Search Help Show map Clear

189 datasets found!

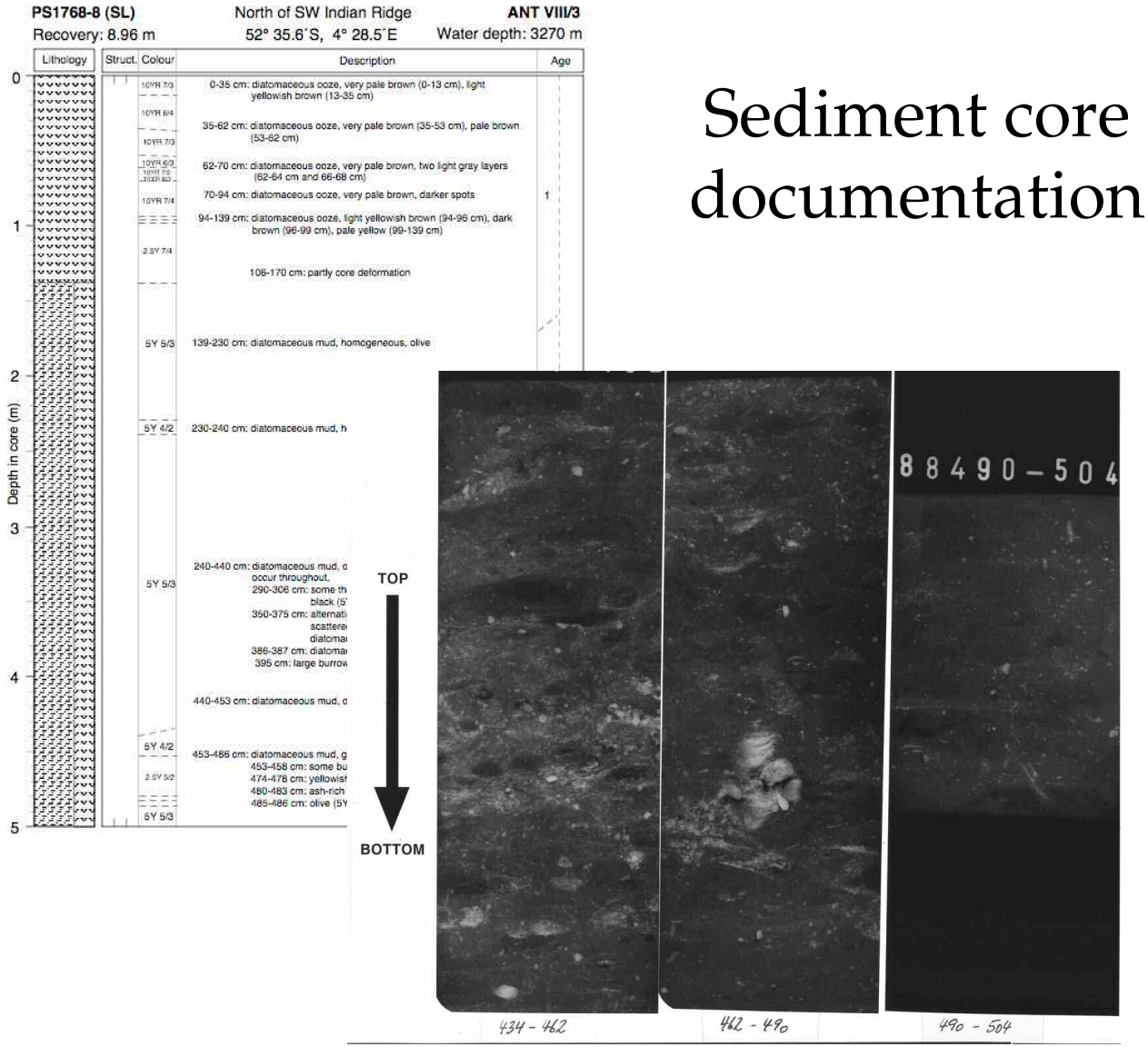
<< PREV | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | **10** | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | NEXT >>

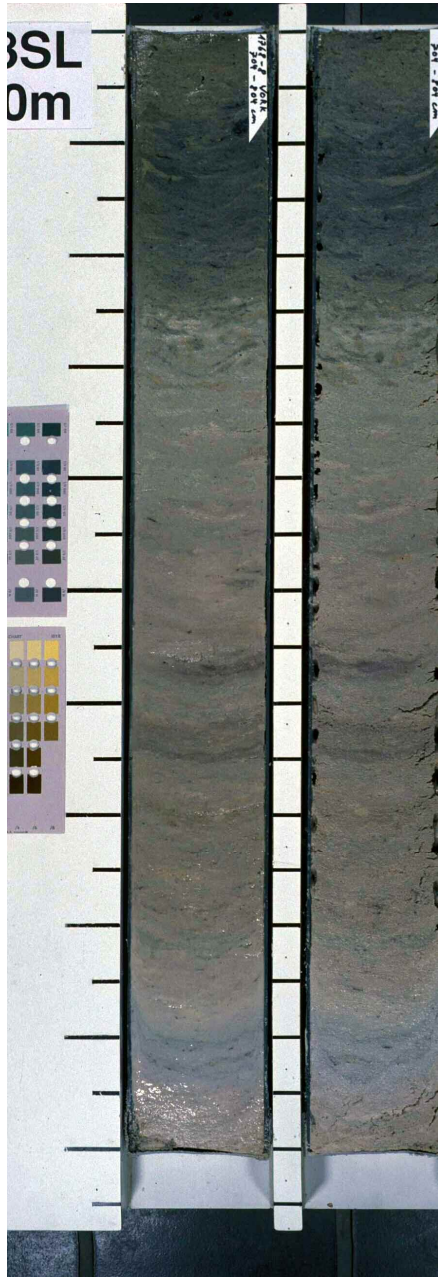
1. **Gutt, J (2004):** Sea-bed photographs (benthos) from the Weddell Sea along ROV profile PS48/281 (©AWI, Gutt 1998)
   Reference: **Raguá-Gil, JM; Gutt, J; Clarke, A et al. (2004):** Antarctic shallow-water mega-epibenthos: shaped by circumpolar dispersion or local conditions?, *Marine Biology*
   Gutt, J; Arntz, WE; Balguerias, E et al. (2003): Diverse approaches to questions of diversity: German contributions to benthos studies around South American and Antarctica, *Gayana*
   Gutt, J; Piepenburg, D (2003): Scale-dependent impacts of catastrophic disturbances by grounding icebergs on the diversity of Antarctic benthos, *Marine Ecology Progress Series*
   (and more)
   Size: unknown
   doi:10.1594/PANGAEA.198686 - Score: 80% - Similar datasets
2. **Gutt, J (2004):** Sea-bed photographs (benthos) from the Weddell Sea along ROV profile PS48/238 (©AWI, Gutt 1998)
   Reference: **Gutt, J; Arntz, WE; Balguerias, E et al. (2003):** Diverse approaches to questions of diversity: German contributions to benthos studies around South American and Antarctica, *Gayana*
   Gutt, J (2001): High latitude antarctic benthos: a coevolution of nature conservation and ecosystem research?, *Ocean and Polar Research*
   Gutt, J (2001): On the direct impact of ice on marine benthic communities, a review, *Polar Biology*
   (and more)
   Size: unknown
   doi:10.1594/PANGAEA.198685 - Score: 80% - Similar datasets
3. **Gutt, J (2004):** Sea-bed photographs (benthos) from the Weddell Sea along ROV profile PS48/219 (©AWI, Gutt 1998)
   Reference: **Gutt, J; Arntz, WE; Balguerias, E et al. (2003):** Diverse approaches to questions of diversity: German contributions to benthos studies around South American and Antarctica, *Gayana*
   Gutt, J; Piepenburg, D (2003): Scale-dependent impacts of catastrophic disturbances by grounding icebergs on the diversity of Antarctic benthos, *Marine Ecology Progress Series*
   Gutt, J; Starmans, A (2001): Quantification of iceberg impact and benthic recolonisation patterns in the Weddell Sea (Antarctica), *Polar Biology*
   (and more)
   Size: unknown
   doi:10.1594/PANGAEA.198684 - Score: 80% - Similar datasets
4. **Gutt, J (2004):** Sea-bed photographs (benthos) from the Weddell Sea along ROV profile PS48/213 (©AWI, Gutt 1998)



doi:10.1594/PANGAEA.319877

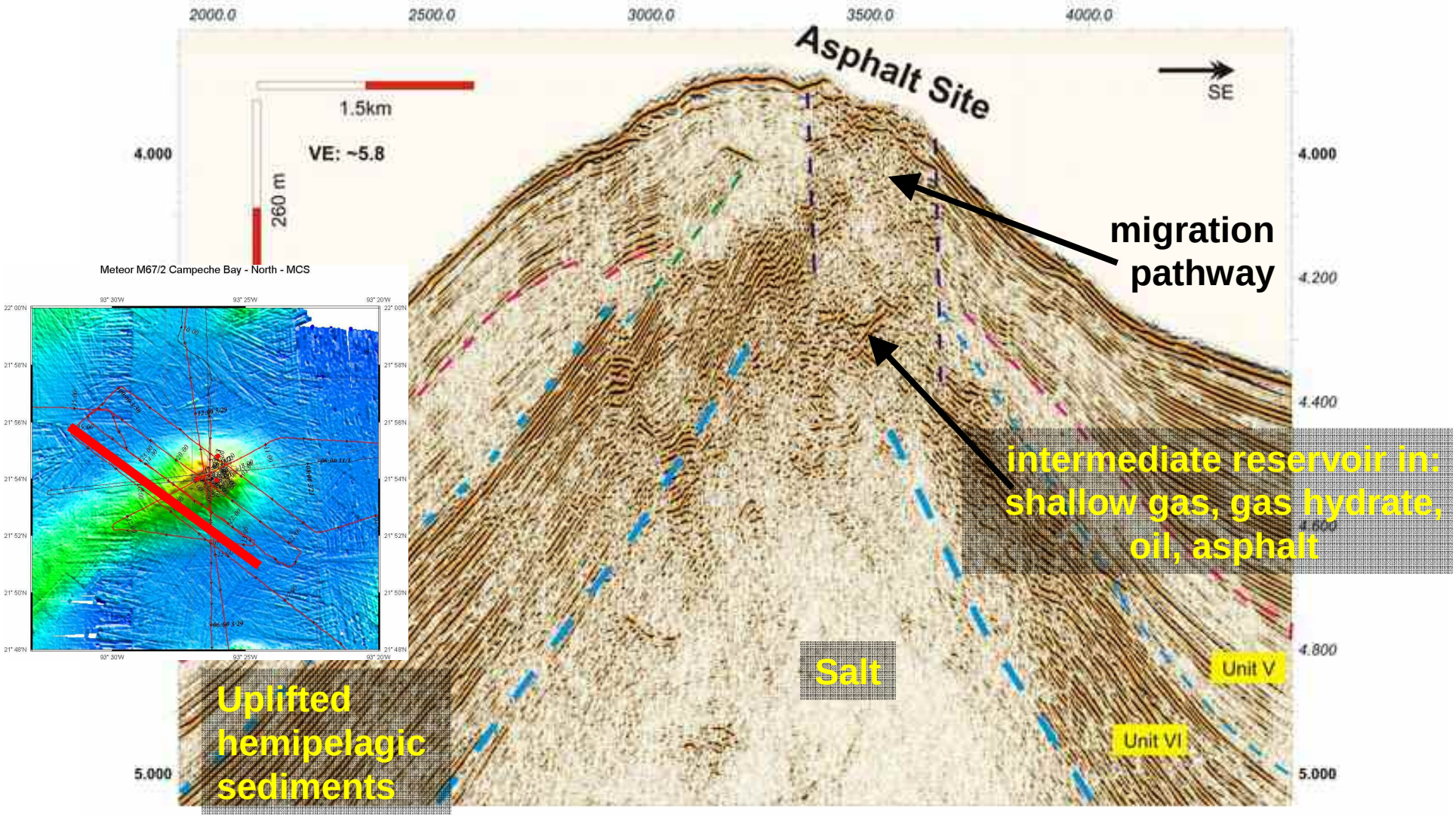
Sediment core documentation





doi:10.1594/PANGAEA.108079

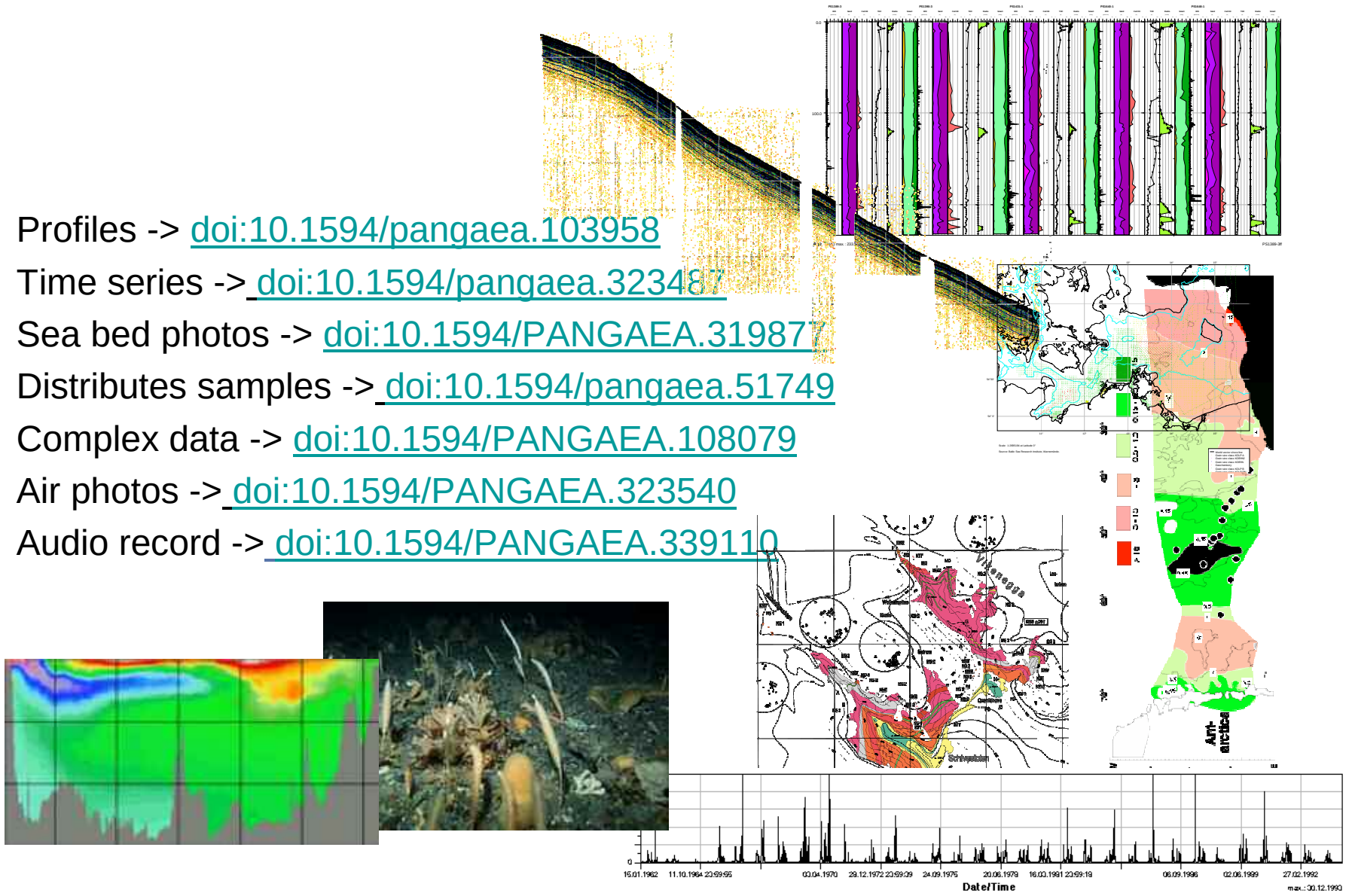
NW – SE seismic multichannel seismic line over Chapopote/ Campeche Bight



MCS Line M672a-GeoB06-116 - 10 m CDP spacing, FD migrated

Data types in PANGAEA

- Profiles -> doi:10.1594/pangaea.103958
- Time series -> doi:10.1594/pangaea.323487
- Sea bed photos -> doi:10.1594/PANGAEA.319877
- Distributes samples -> doi:10.1594/pangaea.51749
- Complex data -> doi:10.1594/PANGAEA.108079
- Air photos -> doi:10.1594/PANGAEA.323540
- Audio record -> doi:10.1594/PANGAEA.339110



PANGAEA –
our data information system

Data policy for using the information system PANGAEA as Open Access archive, data library and publishing system

World Data Center for Marine Environmental Sciences (WDC-MARE)

Alfred Wegener Institute for Polar and Marine Research (AWI), Bremerhaven &
Center for Marine Environmental Sciences (MARUM), Bremen, Germany

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The aim of this policy is to facilitate operation and use of the information system PANGAEA - Publishing Network for Geoscientific & Environmental Data by the research community. This policy recognises the benefits of providing free and open access to good quality data from earth and environmental sciences for future use in global change studies, research projects, and operational services such as portals and search engines. The operating institutes encourage the widest possible use of the Pangaea library, in order to best realise its potential value.

Principles

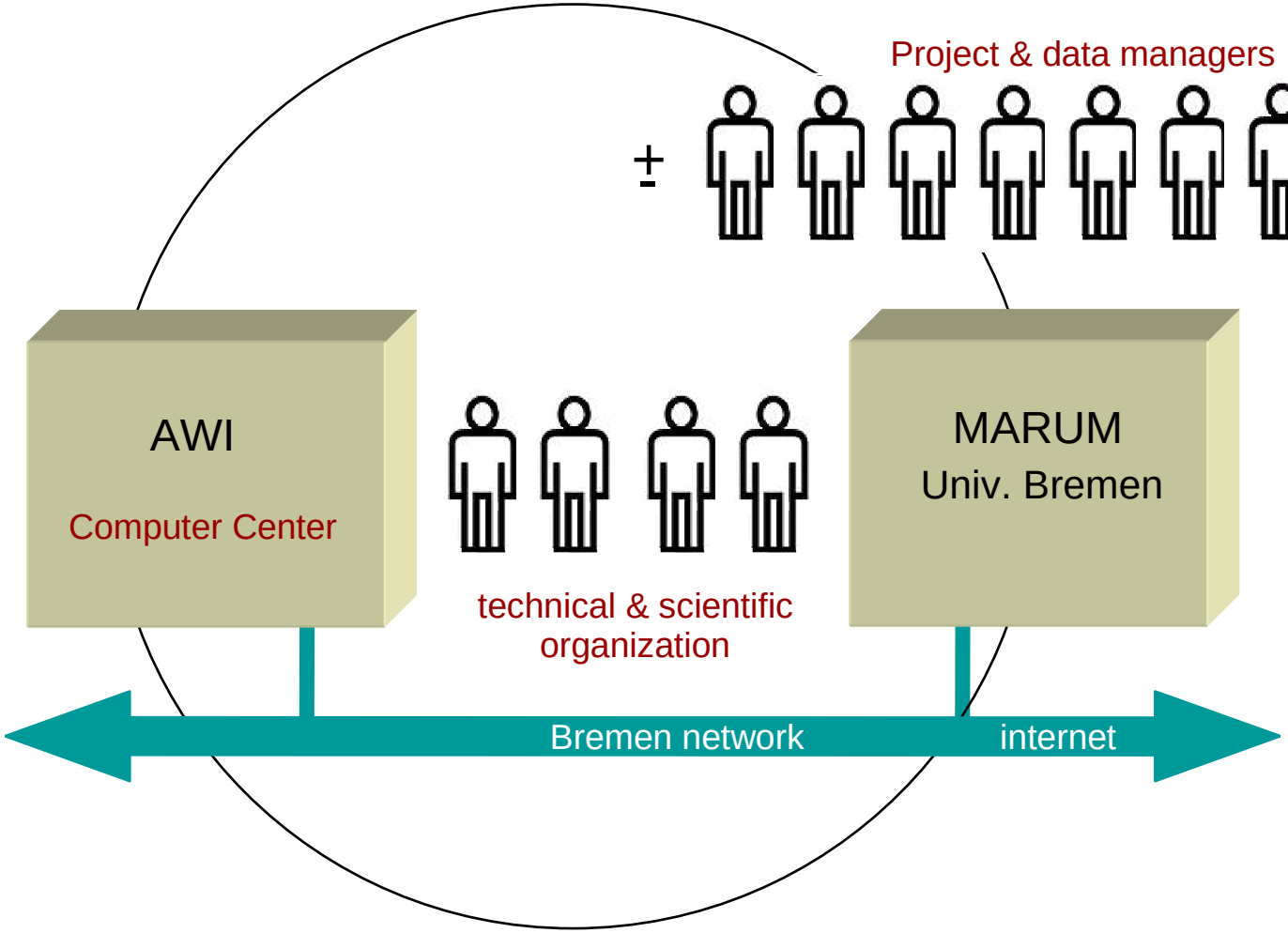
- The guiding principle of the PANGAEA - Publishing Network for Geoscientific & Environmental Data is free and open access to its content by research and education communities in non commercial activities. This is in line with data policies of the IOC, the WDC System and the OECD.

doi:10.1594/PANGAEA.327791

Challenges

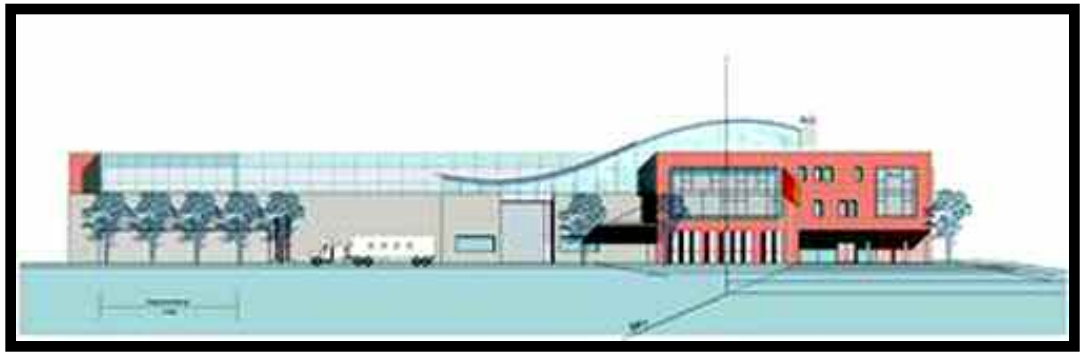
- ☑ Long-term **operation**
  - hardware, software, backup, network
- ☑ Simple and flexible **data model**
  - extensible and adjustable to evolving science
- ☑ Scientific and technical **standards**
  - for science and web integration
- ☑ Scalable **access**
  - depending on different user needs
- ☑ **User** driven and controlled
  - to avoid a technical end in itself

PANGAEA / WDC-MARE - *organisation*



Operating Institutions

marum

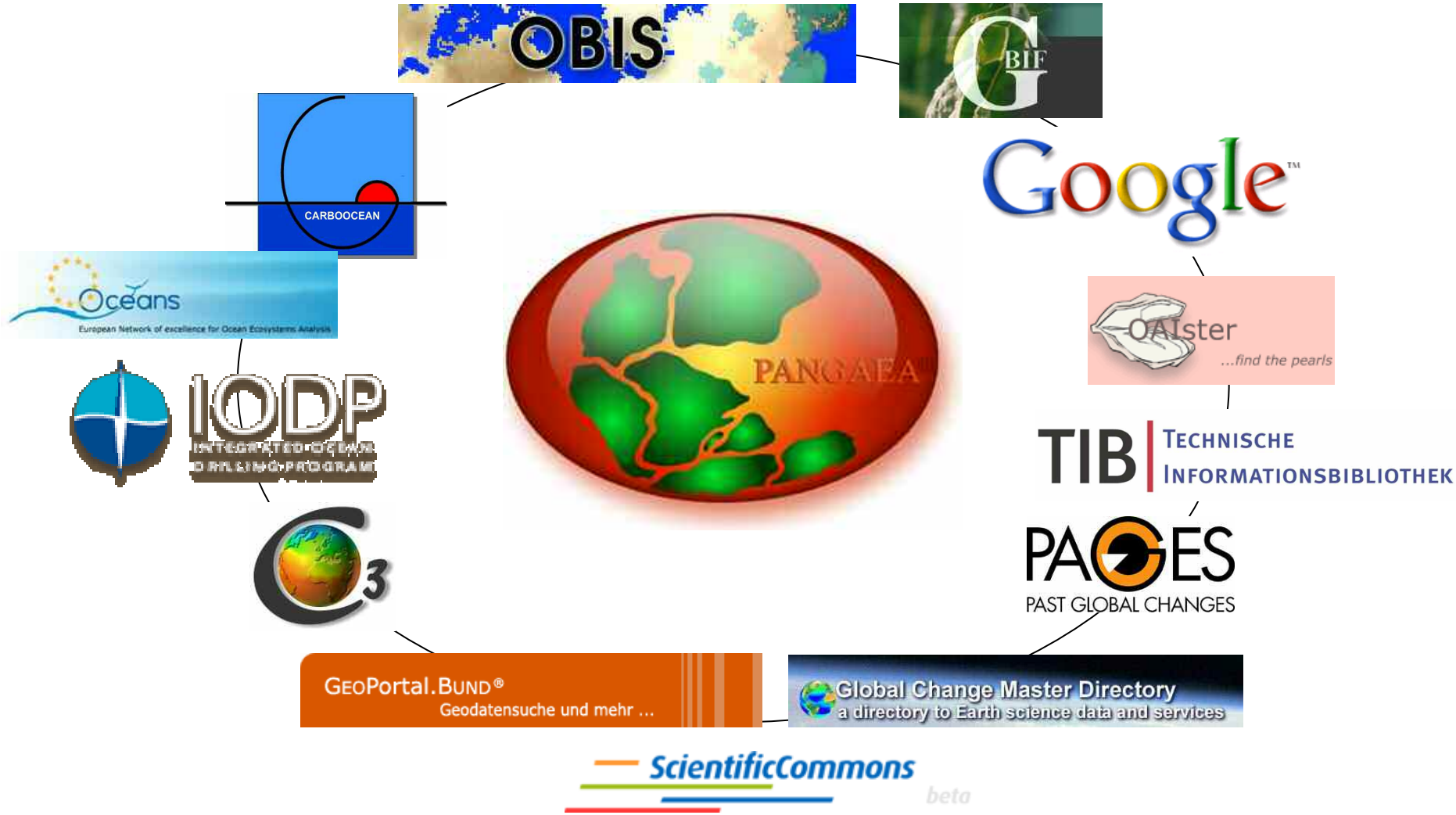


Center for Marine Environmental Sciences, Bremen

Alfred Wegener Institute for Polar and Marine Research
Bremerhaven

AWI

PANGAEA® – *dissemination of data and metadata via portal networks*



PANGAEA - *services & activities*

- Data management
- Data publication
- Data infrastructures (networking)

- Embedded in data management of projects

- Data portals, networking

- Citable data sets

- Distribution through 300 libraries

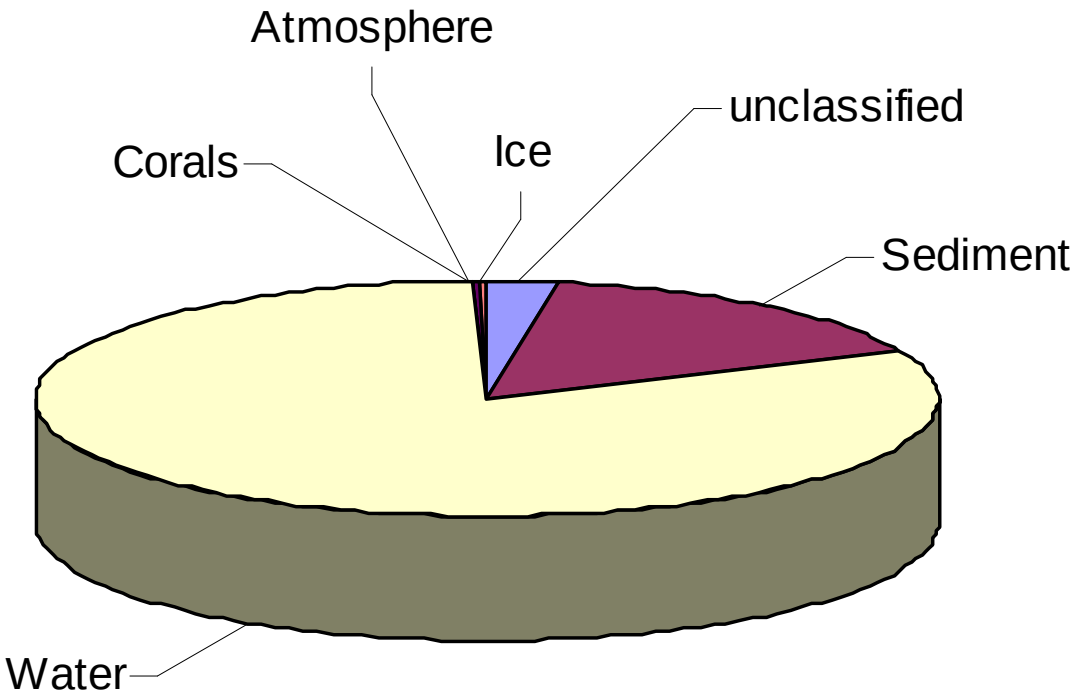
- with focus on Digital Object Identifiers (DOI)

- Accompanied by CD/DVD with data and local search engine

www.wdc-mare.org

www.pangaea.de

PANGAEA - *Statistics (7/2007)*



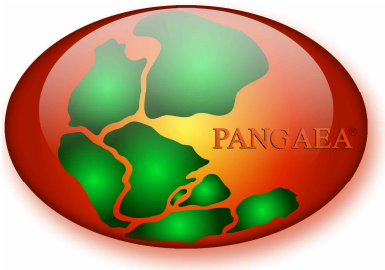
Total number of data sets	541,468
Data items	> 1.8 billions

www.pangaea.de

WDC-MARE - World Data Center for Marine Environmental Sciences

Biogeochemistry, Circulation, and Life of Present and Past Oceans

http://www.wdc-mare.org/



PANGAEA - Publishing Network for Geoscientific and Environmental Data

http://www.pangaea.de/

Word Data Center for Marine Environmental Sciences

Biogeochemistry, Circulation, and Life of Present and Past Oceans

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Database status

Projects:	135
Data sets:	281506
Data items:	883959642

Image of the day

Objectives

The World Data Center for Marine Environmental Sciences (WDC-MARE) is aimed at collecting, scrutinizing, and disseminating data related to Global Change in the fields of environmental oceanography, marine geosciences, and marine biology. It focuses on georeferenced data (numeric, text, and any kind of binary objects) using the PANGAEA information system as its long-term archiv and publication unit.

WDC-MARE is maintained by the Alfred Wegener Institute for Polar and Marine Research (AWI) and the Center for Marine Environmental Sciences (MARUM). Additional support is provided by the Research Center Ocean Margins (rcom).

Latest News [Archive]

2005-12-31
Data archiving of DFG project 'Ocean Gateways' completed.

2005-11-01
The first three issues of the **WDC-MARE Reports** are printed and distributed to about 300 libraries worldwide.

2005-09-13
The data library PANGAEA used by WDC-MARE for archiving provides 250,000 data sets consisting of about half a billion data points.

http://www.wdc-mare.org

World Data Center System of ICSU

established during the International Geophysical Year 1957/58

Principles of the World Data Center System

- operation for the benefit of the scientific community
- long-term archival
- freely available
- data exchange

Principles

Project STD-DOI “Data Publishing”

Technische Informationsbibliothek Coordination
(TIB, Hannover)

World Data Center Climate - **WDC-Climate**
(MPI, Hamburg)

World Data Center for Marine Environmental Sciences - **WDC-MARE**(AWI/MARUM, Bremen)

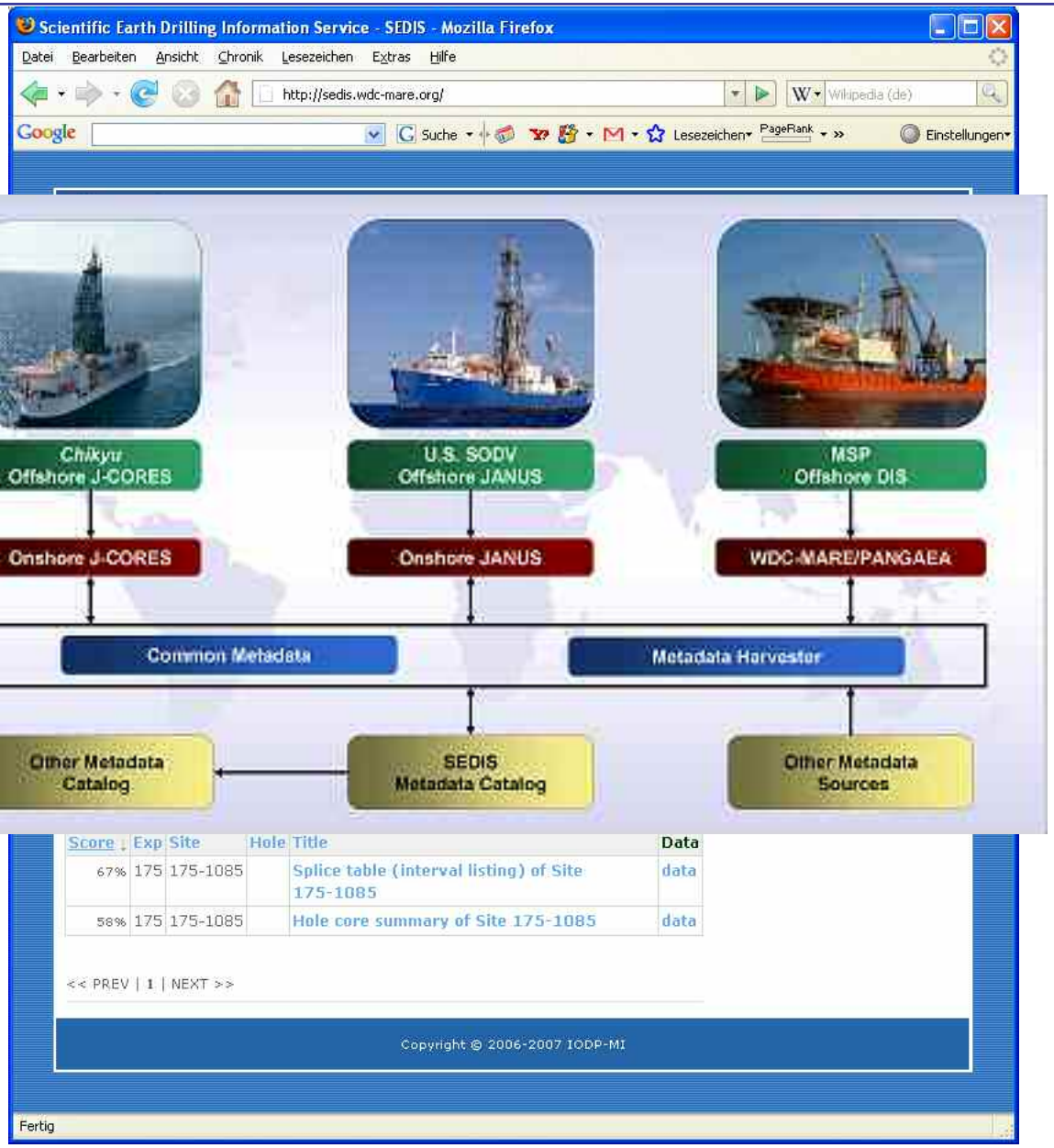
World Data Center for Remote Sensing - **WDC-RSAT**
(DLR, Oberpfaffenhofen)

GeoForschungszentrum - WDC-TERRA?
(GFZ, Potsdam)

http://www.std-doi.de

Deutsche Forschungsgemeinschaft DFG

Scientific Earth Drilling Information Service (S E D I S)



MARUM – WDC MARE is developing SEDIS Phase I for IODP-MI: **central metadata catalogue** listing of all IODP, ODP, and DSDP datasets

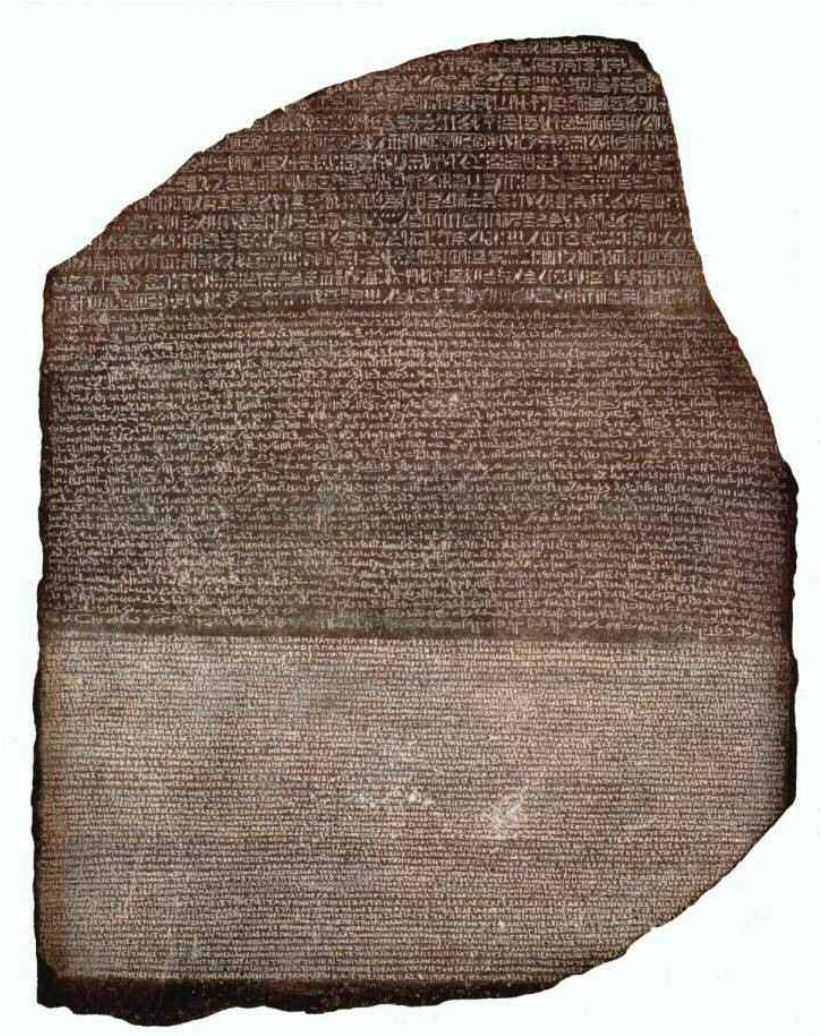
Summary

- Acceptance of a data system stands or falls with symplicity
- Data must be accompanied by standard descriptions
- Data must include in its description a usable citation
- Data storage must be managed by established centers

Long term preservation

Lifetime of storage media (years):

Hard disk	*5*
CD / DVD	*20*
Tape	*30*
Paper	*> 100*
Papyrus	*> 1000*



Stone of Rosette

Recommendations

- We have already well establised data information systems. What we need are more data submitted to the centers.
- Funding agencies should formulate their data policies with appropiate explanations and regulations and special funding should be provided